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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,672	03/26/2001	Hiroyuki Ide	010428	5731

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EXAMINER

JERABEK, KELLY L

ART UNIT PAPER NUMBER

2612

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,672

Applicant(s)

IDE ET AL.

Examiner

Kelly L. Jerabek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-14 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5 and 7 is/are rejected.
- 7) ☒ Claim(s) 4 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/19/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This case has been transferred to Examiner Kelly Jerabek. Please direct all future correspondence to Examiner Jerabek whose contact information can be found at the end of this office action.

Response to Arguments

Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 5 rejected under 35 U.S.C. 102(e) as being anticipated by Fukuda et al. US 6,278,490.

Re claim 1, Fukuda discloses, in figures 5-7, a digital camera comprising:

- an image sensor (X-Y address-type solid state image pickup device, 3) formed, in a light receiving surface, with a plurality of first light-receiving elements (corresponding to short exposure period) and a plurality of second light-receiving elements (corresponding to long exposure period) (col. 10, line 25 – col. 12, line 14);
- a first exposer for subjecting the first light-receiving elements to first exposure for a first period (short exposure period);
- a second exposer for subjecting the second light-receiving elements to second exposure for a second period (long exposure period); an outputter (sensor driving circuit , 17) for separately outputting, from the image sensor, a first charge produced in the first light receiving elements due to the first exposure and a second charge produced in the second light-receiving elements due to the second exposure(col. 10, line 25 – col. 12, line 14). ; and
- a generator (image synthesizing unit) for generating a still image signal of one screen on the basis of the first charge (corresponding to short exposure period) and the second charge (corresponding to long exposure period) , wherein the first period is shorter than the second period and overlapped in time with the second period (col. 11, line 62-col. 12, line 14). Also, it can be seen in figure 6 that the short time exposure

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period and the long time exposure period start simultaneously (col. 10, line 59 – col. 11, line 6).

Re claim 5, Fukuda states that on-chip color filters are arranged on the surface of the image pickup device (3) (col. 5, lines 50-54).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda et al. in view of Ohta US 5,101,276.

Re claim 2, Fukuda states that a first charge read pulse (VRD) is applied to first light-receiving elements (corresponding to the start of the short exposure period) (col. 10, lines 46-53); a second charge read pulse (VRD) is applied to second light-receiving elements (corresponding to the start of the long exposure period) (col. 10, lines 54-58), a single charge sweep-out pulse (VRS) applied to both the first light-receiving elements and the second light-receiving elements. The first exposer controls the first applier (first

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charge read pulse, VRD) and the third applier (charge sweep-out pulse, VRS) to obtain a the short exposure period; and the second exposer controls the second applier (second charge read pulse, VRD) and the third applier (charge sweep-out pulse, VRS) to obtain the long exposure period (col. 10, line 43 – col. 11, line 46; fig. 6). Although Fukuda discloses the above limitations, the reference fails to disclose a shutter member to mechanically cut off incident light on a light-receiving surface.

Ohta reveals in the embodiment of figure 8, that it is well known in the art to utilize a mechanical shutter for exposure (col. 9, line 63 – col. 10, line 7). Thus, Ohta discloses, in figures 8B and 8D, the first exposer controls any two of the first applier, the third applier and the shutter member to mechanically cut off incident light on the light-receiving surface since charge is swept out of field B at the beginning of exposure in figure 7C (third applier) and exposure of field B ends at the close of the shutter in figure 8D; while the second exposer controls any two of the second applier, the third applier and the shutter member to mechanically carry out the second exposure since exposure of field A begins at the open of the shutter (second applier) and ends at the close of the shutter. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image pickup apparatus disclosed by Fukuda by including a mechanical shutter as disclosed by Ohta. Doing so would provide a means for reducing the amount of smear (Ohta: col. 9, lines 65-68).

Re claim 3, Fukuda states that the first exposer controls the third applier (charge sweep-out pulse, VRS) (start of short exposure period) and the first applier (first charge

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read pulse, VRD) (end of short exposure period) and to obtain a the short exposure period; and the second exposer controls the third applier (charge sweep-out pulse, VRS) (start of long exposure period) and the second applier (second charge read pulse, VRD) (end of long exposure period) and to obtain the long exposure period (col. 10, line 43 – col. 11, line 46; fig. 6). However, as disclosed by Ohta it is well known in the art to use a mechanical shutter to end an exposure period (Ohta: col. col. 9, line 63 – col. 10, line 7). Therefore, the end time point of the second exposure period (long exposure period) may be controlled by a mechanical shutter.

Re claim 7, Fukuda discloses all of the limitations of claim 1 above. However, Fukuda fails to distinctly state that the image sensor is an interline-transfer schemed CCD imager.

Ohta discloses the image sensor is an interline-transfer CCD imager formed with a plurality of vertical transfer regions in the light-receiving surface and used together with a mechanical shutter (col. 9, lines 51-68). Therefore, it would have been obvious for one skilled in the art to have been motivated to replace the X-Y address type solid-state image pickup device disclosed by Fukuda with an inter-line CCD with a mechanical shutter as disclosed by Ohta. Doing so would provide a means for reducing the amount of smear (Ohta: col. 9, lines 65-68).

Allowable Subject Matter

Claims 4 and 6 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to anticipate or render obvious the following technical features as recited in the highlighted claims:

Re claim 4, the prior art does not teach or fairly suggest" a digital camera... wherein said first exposurer controls start and end time points of the first exposure by said first applier and said shutter member, respectively, and said second exposurer controls start and end time points of the second exposure by said third applier and said shutter member, respectively".

Re claim 6, the prior art does not teach or fairly suggest a digital camera comprising an image sensor formed with a plurality of first and second light-receiving elements, a first exposurer for subjecting the first elements to a first exposure for a first period, a second exposurer for subjecting the second elements to a second exposure for a second period, an outputter for outputting a first and second charge, a generator for generating an image from the first and second charge and a color filter, wherein the

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color filter comprises a plurality of color blocks including each of the blocks, the first and second light-receiving elements being alternately arranged, in a predetermined number in each, in at least one of the vertical and horizontal directions.

Claims 8-14 allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to anticipate or render obvious the following technical features as recited in the highlighted claims:

Re claims 8 and 9, "A digital camera comprising: ... an image sensor formed with a plurality of first and second light-receiving elements, a first exposurer for subjecting the first elements to a first exposure for a first period, a second exposurer for subjecting the second elements to a second exposure for a second period, an outputter for outputting a first and second charge, a generator for generating an image from the first and second charge and a color filter, wherein the color filter comprises a plurality of color blocks including each of the blocks, the first and second light-receiving elements being alternately arranged, in a predetermined number in each, in at least one of the vertical and horizontal directions".

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contacts


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571) 272-7312**. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on **(571) 272-7308**. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ


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